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TRANSACTIONS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA.

October 14*th*, 1839.

The President, Dr. Gerhard, in the Chair.

Case of Extra-Uterine Pregnancy. By Charles D. Meigs, M. D., Physician to the Lying-in Department of the Pennsylvania Hospital, Lecturer on Midwifery, &c. [With a lithographic engraving.]

Dr. Meigs presented a specimen of *Fallopian Pregnancy*, and furnished the following history of the case:

Mrs. ——, aged thirty-two years, had suffered from an attack of intermittent fever, about the middle of September, 1839. The intermittent appears to have been completely cured by the care of her physician, Dr. Bicknell, of West Philadelphia. Mrs. —— had four children, the youngest of whom was less than two years old. Her health and spirits were good. On Saturday morning, October 6th, 1839, she was heard singing and playing with her children, with whom she was alone, in an apartment down stairs. Shortly afterwards, between six and seven o'clock, on the morning above mentioned, she was heard groaning very heavily, and walking up stairs. Upon entering her chamber, she was seen to be alarmingly ill, with pain which affected the whole of the right front of the body, from the iliac region to the top of the thorax. Dr. Bicknell saw her shortly after the attack, and found her in very great pain, with a pulse of 140 per minute, affected with vomiting, and having a tympanitic abdomen. The remedies employed by Dr. Bicknell appeared to have some effect in appeasing the distress of the patient; and she was so far relieved, that when he left her, at 8 o'clock on Sunday morning, the pulse was beating at 120 per minute, and the pain and restlessness were considerably diminished. Upon returning, however, shortly afterwards, to the house, the symptoms were found to be aggravated, and a messenger was sent to invite me to see the lady.

I arrived at about half past two o'clock, P. M., on Sunday, and having had no intimation of the nature of her attack, I concluded it to be a case of labour, and as soon as I saw her, thought she was sinking under the effects of uterine hæmorrhage; her appearance being that of a person bleeding too much. I approached her for the purpose of removing the pillows, with which her shoulders seemed too much raised. But, upon asking whether she had lost a great quantity of blood, I was surprised to learn that she had not been attacked with hæmorrhage. I was very much disconcerted by this information, because I found that the diagnosis must be difficult in view of the exsanguinous colour, the hurried, broken respiration, the sighing, and the extreme exhaustion of the sick lady, which had led me too hastily to suppose she was flooding. Upon examining the pulse, I found it not very small,—but the effort of the heart was evidently great—the systole being sudden and frequent, but without communicating to the pulse at the wrist any firmness or strength.

The tongue was clean and moist; the skin, where exposed, was cool—under the bed-clothes the heat was considerable, with perspiration. The abdomen was highly sensible upon pressure made on any point of its surface, and the distension so great, that it was as large as that of a woman at the sixth month of gestation; it was *excessively* tense, and highly sonorous upon percussion. The patient had singultus, eructations, and, occasionally, a disposition to vomit. She announced herself to be dying, and was fully convinced that no relief could be extended to her. In about three-quarters of an hour after my arrival, she requested to be raised a little with pillows. This was done, but she became immediately faint, and, shortly afterwards, expired, without the least struggle.

I was much at a loss to account for the state of this lady, seeing that she had been in very good health only some thirty-four hours before her decease.

Notwithstanding her bowels had been moved by the remedies employed by Dr. B., I was very much inclined to think that an intussusception of the intestines, or some great obstruction of the bowel, could alone account for the speedy death which had overtaken her. I even began to feel some degree of confidence in such a view of the case; but could not avoid recurring again to the striking resemblance which her appearance bore to that of persons who had sunk under hæmorrhage.

On Monday, the 8th, at 12 o'clock, the body was examined, there being present with me, Dr. Bicknell, a gentleman a friend of the family, and a female.

The abdomen was much distended and sonorous when percussed; upon laying it open by a crucial incision, a great quantity of bloody water was removed, probably more than a pint. Next I took out between thirty and forty ounces of coagula, which not only filled the pelvis, but were found effused high up in the abdomen. The intestines were greatly distended with gas, the peritoneal coat of the bowels was highly coloured by inflammation, but I discovered no signs of any effusion of coagulating lymph, nor were there any flocks of lymph or albumen floating in the bloody serum which was contained in the belly. No adhesions were discovered. After removing the coagula, the seat of the disease was perceived; the parts were removed, and a most faithful drawing, by

Mr. Weaver, which accompanies this paper, will enable the reader to understand the nature of the accident by which the patient was so suddenly deprived of life.

The description of the drawing is in the words of Dr. GODDARD, to whom the Society is indebted for the admirable preparation with which he is about to enrich their collection.

Description of a case of Tubal Pregnancy, as it appeared on dissection. By P. B. GODDARD, M. D.

Uterus.—The uterus (fig. 1, see plate) was of a natural colour, and the size was that of a woman who had previously borne children. It was lined throughout by a false membrane, rather more than a line in thickness, (7,) extending from the top of the fundus to the intersection of the neck and body, where it tapered off to a thin edge. At this point a gelatinous mass was found, which extended to the os-tincæ, and protruded slightly from it. This little mass was perfectly transparent, very tenacious, and of the colour of Madeira wine. When immersed in alcohol, it became opaque, and coagulated into firm, interlaced fibres.

Ovaria.—The right ovarium had projecting from its surface a large corpus luteum, (4,) and was marked by several cicatrices. The left was marked by one cicatrix, (3.)

Fallopian tubes.—The right fallopian tube was normal, but the left was dilated from the root of the fimbriated extremity half way to the uterus. It had evidently been dilated to the diameter of half an inch, and its structure had separated by distention at the lower part, thus ceasing to be the envelope of the ovum.

Ovum.—The ovum consisted of a fœtus of about six (?) weeks, with the amnion and chorion perfect, the chorion being covered by a false caduca, varying in thickness from two lines to five. This had ruptured at the anterior part, leaving a lacerated opening, about three-fourths of an inch in length, from which the blood found in the peritoneal cavity had escaped.* The tube adhered to the left ovarium by numerous fibres, and was enveloped in a firm coagulum, rendering it impossible to distinguish it from an ovarian pregnancy, until it was carefully dissected.

References to the plate.

1. Uterus.
2, 2. Ovaria.
3. Cicatrix.
4. Corpus luteum.
5, 5. Fallopian tubes.
6, 6. Fimbriated extremities of do.
7. Decidua.
8. Round ligament.
9. Ovum.
10. Fœtus.
11. Dilated portion of fallopian tube.

Remarks by Dr. Meigs.

With the permission of the Society, I shall venture to offer a few remarks suggested by the circumstances of this case:

*This was stated by Dr. Meigs to be from thirty to forty ounces.

1st. The wound occasioned by the rupture of the tube, ought not to be considered as alone sufficient to account for the sudden destruction of a healthy adult. Much more extensive wounds of the gestative organs, as in the Cæsarean operation, and in lacerations in labour, do not necessarily cause the death of the patient; and we know that the removal of the ovaria, so frequently practised upon some of the inferior animals, is rarely followed by either extensive inflammation or death.

2d. The loss of forty or fifty ounces of blood, especially when the effusion requires many hours to effect it, is not sufficient to cause the death of an adult.

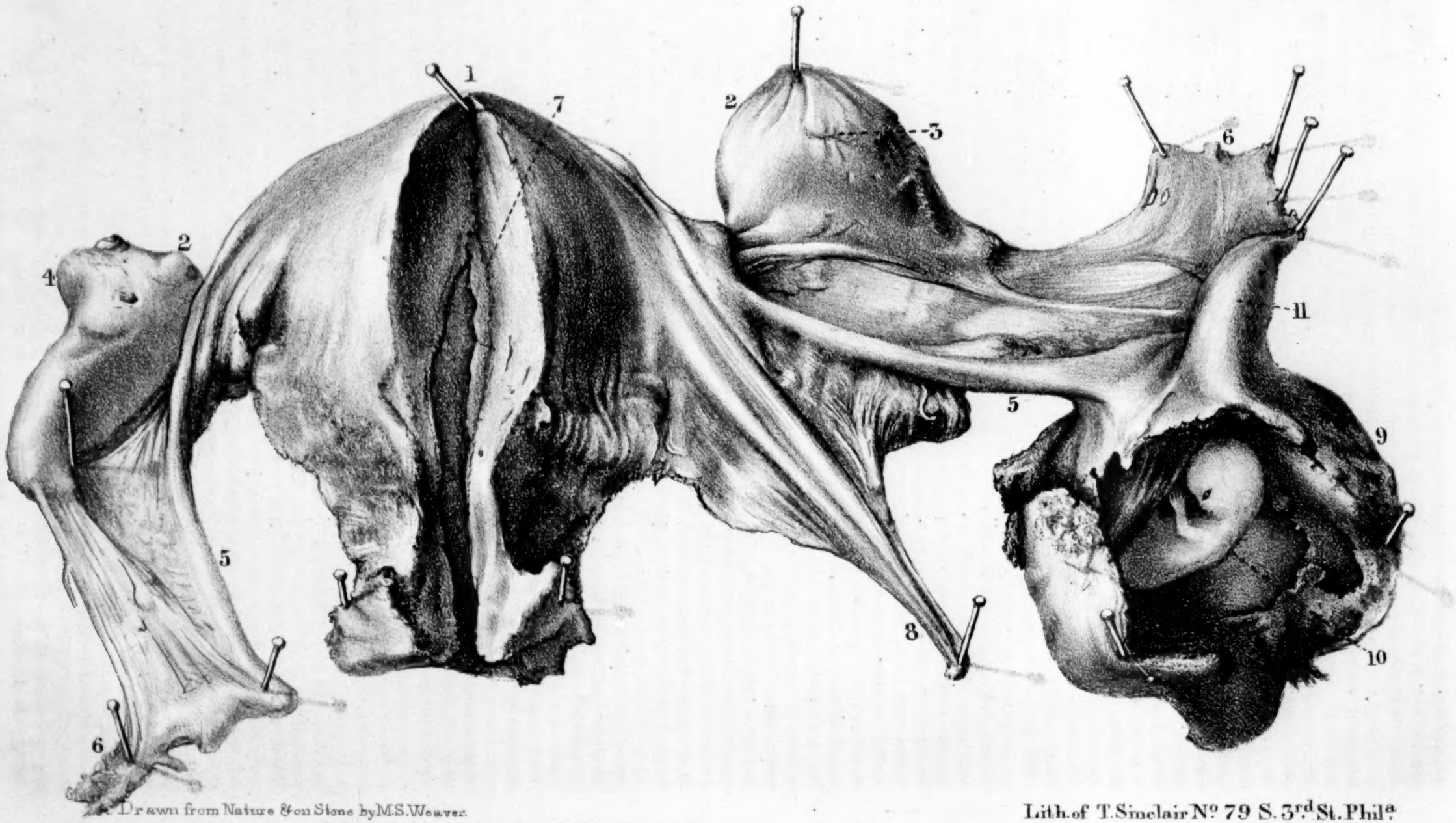
3d. Mere active, red inflammation of the peritoneal coat of the intestine, does not so speedily cause the death of the patient. Several days must elapse, and the inflammation should come to one of its terminations, as, for example, that of inflammatory effusion into the sac, before death closes the scene.

4th. I have already remarked upon the extreme and painful tension of the abdomen in this case, and I venture to suggest to the Society a consideration of the violent perturbation introduced into several important functions by this tympany, which so generally accompanies the peritoneal forms of fever.

(1.) The peritoneal coat of the bowel being inflamed, its muscular coat becomes quiescent or inactive, and permits the tube to be distended by the gases that are extricated in the stomach or intestines. Muscles of volition refuse to act in obedience to the will, when their contractions cause pain in the parts moved by them. A muscle lying under an extensively inflamed portion of skin loses its voluntary contractility, on account of the pain its motion produces, and even the extensors of the leg will not act if the knee-joint is acutely inflamed and sensible. Examples of this pathological sympathy are so numerous and obvious, that they need not be further cited here. It appears to me that the same pathological sympathy may be presumed to exist in the involuntary muscles.

It is rarely that we meet with a case of peritonitis, whether puerperal or not, without discovering an early proneness to tympanitic distention of the abdomen. The distention takes place almost as soon as the pain and soreness begin to be felt. Can any reason be assigned for this symptom other than the suspension of the peristaltic power caused by the inflamed state of the peritoneal coat of the bowels. The serous coat being inflamed, the muscular coat loses its contractility, and passively yields to the distending force of the gases extricated within the tube, which inflate it to its utmost limit of expansion. I do not know whether the inflammation of the serous coat is early propagated into the muscular tissue which lies under it; I presume it is not immediately.

(2.) The violent distention of the alimentary tube, which is the direct cause of much pain in the bowel itself, produces upon the whole



Drawn from Nature & on Stone by M.S. Weaver.

Lith. of T. Sinclair N° 79 S. 3rd St. Phila

nervous apparatus of the belly the effect of a great shock; and the perturbation extends to various organs, so as to exert the most pernicious influence upon the patient's vital forces.

(3.) The diaphragm does not descend freely upon the inflamed and distended mass contained within the abdomen, not only because it meets with a great physical resistance, but because it gives rise to violent pain by its pressure in descending. Hence, in these cases, the respiration becomes short and hurried, being often thirty-five or forty per minute, and simulating the pleuritic respiration. This phenomenon cannot co-exist with a normal performance of the chemical functions of the lungs; therefore, in bad cases, the patient soon becomes pale, assumes a peculiarly haggard appearance, and a slight degree of asphyxia becomes discoverable in the bluish-pale tint of the face,—the eyes grow dim,—the mind languishes, or is calm, at least,—a mortal coldness and blueness seize upon the extremities of the hands and feet, because the calorific and decarbonizing functions of the lungs very early give way under the circumstances in question.

As this is not a proper place to extend these remarks, I shall beg leave to refer for my views more *in extenso*, to page 354 of the Phil. Pract. of Mid., published here two years since.

The rapid dissolution of the lady whose case I have related, and the appearances discovered upon the dissection, confirm me in the justness of the pathological views I have expressed, and which I have long entertained, as to the pernicious tendency of a tympany accompanying peritonitis. If they are well founded, it becomes a most important question, whether we can safely undertake the treatment of peritoneal fevers without the aid of cathartic or aperient medicines, which alone are capable of exciting the peristaltic fibres while invested by an inflamed serous membrane. The carminative doses sometimes resorted to in order to get rid of the inconveniences of the tympany, are powerless in tympany from peritoneal inflammation. It is quite certain, I think, and I have fully expressed that opinion, that a bold use of the lancet is *the remedy* for such disorders. Yet the treatment of them, in order to be successful, requires the aid at least of aperients, repeated sufficiently often to keep down the dangerous disturbance of the economy, which cannot but follow an over-distended bowel in peritoneal fevers. In regard to the particular case of Mrs. ———, it is clear that the injury was mortal from the moment of the tube's rupture. I have endeavoured to explain the rapidity of the case by calling your attention to the perturbing influence of the extraordinary and extensive tympany.

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8th November, 1839.

The President, Dr. Gerhard, in the chair.

Dr. J. Forsyth Meigs exhibited a specimen of

Fibrinous Tumour of the Breast,

and read the following account of the case:

Elizabeth M——, a coloured girl, aged fifteen years, entered the Pennsylvania Hospital on the 25th of October, 1839, for a tumour, occupying the left breast. She is remarkably well developed for her age, and states that she has always been of a healthy and vigorous constitution. Her parents are still living, and in good health. She does not know that any of her relatives have suffered from a disease similar to hers. She first menstruated somewhat more than two years ago, and has been perfectly regular since. About two years before her coming to the hospital, while engaged as a domestic in a healthy part of the country, her attention was for the first time called to a hard, circumscribed, moveable tumour, of about the size then of a hazel-nut, occupying the upper, outer part of the breast. The tumour has continued gradually to increase in size up to the present time, without causing any interruption to her usual good health, and producing no inconvenience whatever, excepting slight dull pain now and then, lasting but for a short period. She can assign no cause whatever for its production.

November 5th.—The tumour is somewhat oblong in shape, with its longest diameter vertical; consisting apparently of two substances, one rather firm and unyielding, feeling smooth to the touch—the other consisting of a number of rounded bodies projecting from the first, elastic, with a sense of obscure fluctuation. The whole mass is perfectly moveable under the skin, without any connection apparently with either the integument or muscle. There is no pain even upon handling it roughly, and the nipple is free and not retracted; two veins of much larger size than any on the opposite breast may be seen running across the tumour. The mammary gland may be felt in part beneath the tumour, of less size than the opposite one. There is no enlargement of the glands of the axilla.

On the 6th of November Dr. Harris removed the tumour, in connection with the mammary gland. The hæmorrhage was considerable, though no very large arteries were divided. The number of ligatures amounted to nine.

Examination of the tumour.—The tumour, when regarded by the edges, is of an irregular oblong shape. The posterior face, that applied to the pectoral muscle, is an irregular plane, rendered uneven by the projection of a number of rounded lobules, varying in size from a quarter to half an inch. The anterior surface is of a convex shape, owing to the lobules being much larger, and also from the tumour being much the thickest in the centre. The dimensions are as follows:—greatest diameter, that which presented vertically, four inches; transverse, three and a half inches. The greatest thickness is in the centre, two and a half inches; from this it slopes towards the edge, where it varies from a quarter to half an inch. There are three entire sacs forming coverings to the tumour. The most external is formed of a thin, easily torn, cellular tissue; this is readily dissected from the surface of the tumour, and passes from the top of one projection to that of the next, dipping

but a very short distance into the sulcus between the two lobules.

The second tunic is also formed of cellular tissue, much more condensed, and more closely applied than the first, passing like that, also, from one projection to the next, and reflected but a short distance into the sulci. This appears to hold the lobules together, giving them considerable support. The third covering is of a cellulo-fibrous texture, somewhat thin and attenuated upon the exterior, becoming more dense, with greater evolution of the fibrous structure, as we proceed towards the interior of the tumour. This membrane dips down into the sulci to various degrees of depth, and contains within it the proper, peculiar matter of the disease.

Upon making an incision through the central part, it presents the appearance of a number of lobes, of various shape and size, fitted closely together, and connected by short laminæ of cellular substance. These lobes appear to be again divisible into lobules, formed of the proper structure of the tumour developed in the meshes of a fine cellular tissue. The cut surface resembles more closely a section of the pancreas than any thing else to which I can compare it: it has a dull-white, shining aspect, and when the finger is passed over it, gives an impression of irregularity, owing to the division into lobes and lobules, while each separate lobule feels smooth and polished. It is of moderately firm consistence, cuts without yielding under the scalpel, and does not give a crying sound.

By careful dissection, it may now readily be seen that each projecting lobule forms the summit of a body of a pedunculated form, the bases of which, in the smaller bodies, are directed towards, and spring from the larger,—while in the case of the latter they can be traced as radiating from a common centre, placed in the posterior part of the tumour. Each pedunculated body consists of the proper structure of the tumour enclosed in the cellulo-fibrous sac, adhering to each other laterally by short bands of cellular tissue, readily divided by the back of the knife. The membrane can be traced to the bottom of each sulcus, when, as we reach the origin of the body under examination, it may be seen reflected across to the one adjoining, thus preventing any further prosecution of the dissection in this direction without cutting through this sac.

Remarks.—The most interesting question with regard to the tumour in question, is the following: Is it, or is it not liable to be reproduced? To determine this satisfactorily I have consulted various authorities, and shall proceed to give the result of my inquiries.

Mr. Abernethy, in his Surgical Observations, describes a tumour very nearly resembling the one under consideration. This he calls *pancreatic sarcoma*, and says: "This new-formed substance is made up of irregularly-shaped masses, in colour, texture, and size, resembling the larger masses which compose the pancreas. They appear also to be connected with each other, like the portions of that gland, by a fibrous substance of a looser texture." He states that he has frequently seen the axillary glands enlarged in connection with this kind of tumour, and yet even after this, there has been no return of the complaint after excision. Sir A. Cooper describes, under the term of simple chronic tumour of the breast, a disease answering very closely to the appearance of the above. He thus describes it: "Upon dissection, the swelling is found to be composed of a number of lobes connected together by a condensed cellular tissue, and which appear as enlargements of the lobes of the mammary gland. These lobes are composed of smaller, which, by maceration, may be separated. The appearance of the disease, when cut into, is that of sweet-bread, that is, lobulated in every part, or composed of large lobes, which are divisible into smaller." He considers this disease not to be malignant, and mentions that it attacks the young and apparently healthy. In the last number of the new Dictionnaire de Médecine, M. Velpeau, in the article upon the mammæ, describes, under the head of fibrinous tumours, one very similar to the above. He says: "I include under this title, (fibrinous tumours,) masses variable in regard to their colour, consistence, and the manner in which they are connected with the surrounding tissues, but which possess the common characters of being inclosed in one or more cysts, of acting amongst the tissues as foreign bodies, and of resembling none of the natural organic elements of the body. The volume of these tumours varies from that of a small nut to that of the head; they are usually studded with projections, irregular, and elastic or fungoid. When cut into they appear somewhat like a lymphatic ganglion, distended or enormously hypertrophied, lobulated, friable, breaking under the pressure of the finger; in other cases they resemble exactly old fibrinous concretions which have become organized. They are sometimes sufficiently firm and homogeneous to resemble the texture of scirrhus, or fibrous productions." M. V. states that these tumours are met with more frequently among young girls and unmarried women than any others. He classes them among the benign tumours, and advises extirpation, having as yet seen no case of return after the operation.

I have consulted also the works of Boyer and Dupuytren, but can find no description resembling exactly the one under consideration.

Mr. Carswell says that when the heterologue deposit "assumes a regular, lobulated arrangement, so as to represent an appearance similar to a section of the pancreas, it forms what was called by Mr. Abernethy the pancreatic sarcoma." This he places in the genus Carcinoma, and states that it is liable to be reproduced.

Dr. Hodgkin's description of the formation of malignant tumours coincides almost precisely with the anatomical arrangement found in this disease. He says that they consist generally of pedunculated bodies having a common origin for their peduncles, and not connected by their sides. His theory with regard to their formation is as

follows:—He supposes them to consist of a cyst, containing in its cavity packets of pedicles, and bodies also inclosed in cysts. In those tumours where the internal growth is most active, the contained cysts enlarge more rapidly than the containing, thus producing its rupture, and, advancing rapidly through the opening, in this way increase the size of the tumour.

Having thus quoted the opinion of several writers with regard to the malignancy of tumours like that which is the subject of the above description, I find that Velpeau, Sir A. Cooper, and Mr. Abernethy, all declare the disease not likely to be reproduced, as also Drs. Harris, Randolph, and Norris, who were present at the operation, and who at once declared the tumour to be non-malignant; while opposed to this opinion are Mr. Carswell and Mr. Hodgkin.

Philadelphia, November 8th, 1839.

To the Editors of the Medical Examiner.

GENTLEMEN,—Having received, through the kindness of a friend, the "Ninth Report of the Ophthalmic Hospital at Canton, for 1839," by the Rev. P. Parker, M. D., I hope that the subjoined list of diseases treated, and abstract of some of the cases, may not be without interest to your readers.

Yours, respectfully,
A. DENMAN CHALONER.

Since the last report, the growing confidence reposed by the people in the skill of the *foreign* surgeon has been strongly displayed in the degree of readiness with which they submit to painful operations, and even to the loss of limbs, although this is so greatly opposed to their prejudices and principles.

A Chinese female (the first, so far as we know, at least in modern times) has submitted to an amputation of her right arm; and four others have undergone extirpation of their breasts, on account of cancerous disease in an advanced stage.

During the months of July, August, and September, the Hospital was closed, and under repair, and that at Macao meanwhile opened.

The patients that have been admitted during the term, are 505; the aggregate, since the opening of the institution, is 6300.

The following is a tabular statement of the numbers of each disease that have come under observation during the past term.

Diseases of the Eye.

Granulations,	18
Ectropium	1
Entropium,	46
Trichiasis,	1
Lippitudo,	15
Xeroma,	1
Hordeolum,	1
Excrescences of the lids,	1
Quivering lids,	1
Paralysis of muscles,	1
Obstruction of nasal duct,	3
Disease of Caruncula Lachrymalis,	2
Ophthalmia, Acute,	21
" Chronic,	84
" Purulent,	3
" Scrofulous,	2
Ophthalmitis,	1
Pterygia,	22
Acute inflammation of the cornea,	1
Nebulæ,	44
Ulceration of cornea,	2
Opacity of cornea,	3
Leucoma,	1
Staphyloma,	20
Iritis, Chronic,	3
Synechia, Anterior	5
" Posterior,	5
Closed pupil,	2
Choroiditis,	1
Cataracts,	44
Glaucoma,	2
Musculi volitantes,	2
Myosis,	3
Amaurosis,	4
" Partial,	2
Myopia,	2
Day blindness,	1
Night blindness,	1
Fungus hæmatodes,	1
Loss of one eye,	22
" of both eyes,	12

Miscellaneous Diseases.

INFLAMMATORY DISORDERS.

Rheumatism,	6
Thrush,	2
Abscesses,	5
Arthritis,	2
Fistulous mammæ,	1
Fistula, (in ano,)	1
Ulcers, (chiefly of lower extremities,)	3
Ulceration of fauces,	1
Inflammation of fauces,	1

Constitutional Diseases.

Ascites,	2
Anasarca,	6
Opium mania,	8
Scrofula,	9

Diseases of the Ear.

Deafness,	5
Otorrhœa,	1
Meatus auditorius wanting,	1

Diseases of the Organs of Circulation.

Palpitation of heart,	1

Diseases of the Organs of Respiration.

Chronic Bronchitis,	1

Diseases of Digestive Organs.

Diarrhœa,	2
Worms,	4

Diseases of the Liver.

Chronic ind. and enlargement,	1

Diseases of the Generative Organs.

Fistula urethræ,	1
Urinary calculi,	1
Bubo,	1

Diseases of the Nervous System.

Paralysis,	1

Cutaneous Diseases.

Tinea capitis,	4
Scabies,	3
Lichen circinatus,	1
Various,	4

Diseases of the Bones.

Osteo-sarcoma,	1
Hip-joint disease,	2
Caries of femur,	1
" of submaxillary,	1

Injuries.

Fracture of radius and ulna,	1
Disease of chest from bursting of a gun,	1
Curvature of spine,	1
Excision of tongue,	1
Injury from violent exercise,	1

Preternatural and Diseased Growths.

Horny excrescence on head,	1
Polypi, nasal,	1
Tumours, sarcomatous,	2
" cutaneous,	11
Hydatid of breast,	1
Scirrhus of breast,	5
Goitre,	1
Hypertrophy of the arm,	1
Atrophy of the arm,	2

CASES.

Horn upon the Crown of the Head.—Chow Keätseuen, aged 31, a florist of Shuntih, had a horn upon his head, just to the right of the "bump of veneration." The patient stated, that some years since he had an encysted tumour upon his head, the integument of which was destroyed by escharotics, and the fluid escaped. The germ of the horn was thus exposed. Its growth had been gradual. Some time previous to coming to the hospital, half an inch or more had been cut off. At this time, the remaining truncated cone was a full inch high, and two inches in circumference at the base. It was of a yellow-white color, and of the usual hardness of horn. It was attached wholly to the integument of the scalp, and gave great pain if pulled.

Dec. 19th.—It was removed. Two elliptical incisions were made, so as to take out the whole of the integuments in which it originated. This was preternaturally soft, and the veins and arteries were unusually large and numerous. The wound was brought completely together by sutures and adhesive straps, and in about one week it was quite well.

Dec. 14th.—Tumour, pendulous from the Upper Lip.—Kwŏ Pe, aged 27, of Shuntih. Seven years since, this young woman found a tumour commencing on the right side of the upper lip. It had now attained the size of her fist, and hung pendulous, reaching below the chin, and carrying the under lip to the left side; not only disfiguring, but impeding her speech, and requiring to be supported when she eat.

Dec. 19th.—The tumour was removed by the hare lip operation; two arteries of considerable size were divided; one needle was introduced, and two or three sutures. A sufficiency of the upper lip was preserved to bring the point of union to the angle of the mouth, so that when united there seemed to have been but one incision from that point, straight to the outer edge of the nose.

Dec. 22d.—Third day after the operation, the first time of dressing, the needle was removed. The wound had nearly healed by the first intention, and, on the 5th, only a piece of adhesive plaster was required. In a few days more she was discharged perfectly well, and her natural features nearly restored.

REMARKS ON THE MALIGNANT INTERMITTENT AND REMITTENT FEVERS *of Limestone County, Alabama.* By T. STITH MALONE, M. D.

To the Editors of the Medical Examiner.

GENTLEMEN,—I am induced to offer you a few remarks, elicited by the perusal of Nos. 34 and 38 of your very interesting *weekly*,—more particularly, the letter of Dr. J. R. Buck, of Memphis, Tennessee. A close practice of six years in Limestone county, Alabama, has given me some experience in the diseases to which I wish to call your attention. Limestone county is watered by the Tennessee and Elk rivers, and some eight or ten smaller streams, with a number of *mill dams* upon several of the latter. Hence, there are very sufficient causes, especially in dry seasons, to originate the most violent grades of intermittent and remittent fevers. So violent is the character of these fevers, that it is no unusual circumstance for patients to die in the first chill. It is more common, however, for the first, and, occasionally, the second, to be light, confining the patient to bed but for a few hours; the second or third, if no means be used to check the attack, will prostrate him, when he will have a cold skin, intense thirst, great oppression of the chest, with stricture across it, producing fainting, and an intolerable sensation of suffocation, with severe pain, upon every attempt at respiration. There is occasionally great pain in the epigastric region, with jactitation, and a general feeling of numbness or deadness. The pulse is very uncertain: I have seen it unaltered, for forty-eight or sixty hours, in frequency varying in different individuals from forty-four to one hundred and thirty-eight, or one hundred and forty, occasionally falling in the number of beats as the cold stage goes off, though more generally remaining the same, or increasing. As to its volume, etc. etc., I have seen almost every variety. In young subjects, epileptical attacks, in from four to eight hours after the induction of the chill, are sometimes seen.

The success of the prevailing plan of treatment in this county, is decidedly more gratifying than seems to be the case in the districts of some of your correspondents. The age of the patient, his idiosyncracies, etc., not being unfavourable,

if the physician be called at the commencement of the attack, he expects to lose but few patients, say, not more than two out of fifteen cases,—and if there be no relapses, or improprieties on the part of the patient, even much less.

I give you my general course of treatment, which I believe is pretty generally that of the physicians of the county. Called to a case of the character to which I have alluded, I should at once tie up both arms, and open a vein in each, to relieve the engorged and congested condition of the lungs. We sometimes see the oppression in the chest, which appears to be concentrated in a single sharp pain, that is for a moment most agonizing, at once give way, leaving the patient partially, if not entirely relieved of his feelings of suffocation. The change in the character of the attack about the chest, begins when from two to six ounces of blood have been abstracted; and though occasionally alarmed by its acuteness, I have never seen it fail to give way, if the abstraction of blood be persevered in. As soon as the chill is over, we give powders of

Calomel gr. v.
Nitrate of potash gr. vi.
Ipecac. ½ gr.

Every two or three hours, till four or five doses have been taken.

If there be irritable stomach, or a sensation of weight or oppression there, we cup the epigastrium to the amount of eight or twelve ounces—then apply stimulating warm poultices, to be followed or not, as occasion may require, with mustard or fly blisters. If the stomach be irritable, the above powders, with acetate of ammonia, in *cold* water, every hour or two, may be given; if not, and the parched mouth, and dry tongue, and restlessness do not relax, a quarter of a grain of tartar emetic should be added to the powders. This course, in my estimation, reduces the congestion, and brings about a general diffusion of the energies, an equalized circulation. We then throw in large doses of quinine, to keep up the restored balance of the circulation, and to prevent the reaccumulation of blood in the large vessels, the lungs, or the stomach, liver, and spleen. I make it a rule to commence the exhibition of quinine *at least* eight hours before the expected return of the chill; and my experience is, that though the mouth be dry, the skin hot, etc., if you precede the quinine with sufficient depletion, and then give doses of it large enough, (say fifteen to twenty-five grains, every two to four hours,) the tongue will become moist, the skin will relax, and "great drops of sweat will come rolling out." If, by the most active and energetic depletion, which is much assisted by the free exhibition of cold iced water, I can quiet the patient sufficiently, (I do not know how else to express it, as the pulse is a very uncertain test, and the skin may be cool or the contrary,) I commence with the quinine, and get the patient's system under its influence as early as possible after the first chill. Of the cases of relapse, I shall merely remark that they are exceedingly troublesome, but nearly always recover under the harassing effects of salivation.

Athens, Alabama, October 23d, 1839.

CHARACTER OF THE FEVERS *prevalent at Chicago, Illinois, in* 1838, '39. By Daniel Brainard, M. D.

To the Editors of the Medical Examiner.

Gentlemen,—In accordance with a suggestion in a late number of your journal, I send you a short account of the fevers which prevailed at Chicago during the present and past years.

The southwestern shore of Lake Michigan is low, and the country for several miles adjoining is level; but it rises gradually into "rolling prairies," which are covered with tall grass, and studded with island groves. Between this clear lake, on the one hand, and these fertile prairies on the other, the new city of Chicago is built. The dwellings are principally of wood, and many of them are of the poorer kind. The inhabitants are a collection from nearly every quarter of the globe, although the construction of the Illinois and Michigan canal has, of late, given the preponderance to those from the "Emerald Isle." The climate in summer and autumn, when southern and western winds prevail, is extremely mild; but in the winter, when the winds are from the north, it is cold and bleak.

During the months of July and August, 1838, the remittent fever made its appearance. It usually commenced by languor, loss of appetite, and diarrhœa. These were followed by pains in the head and limbs, chills or rigours, frequent pulse, burning heat, and great thirst. In some cases, instead of diarrhœa, there was constipation. The tongue was in some cases dry and brown, in others brown, but moist, and covered with a thick coat, in others still it was red and denuded. The skin was usually hot and dry during the whole course of the disease, sometimes the extremities were cold, and in a few instances the skin was moist during the remission. Nausea and vomiting were common attendants of the first stage. Tenderness on pressure of the epigástrium occurred in about half the cases. The urine was usually scanty and red, until convalescence.

The duration of the disease varied from three or four days to as many weeks. Most frequently, after the slight premonitory symptoms mentioned above, a slight chill occurred, which was followed for twelve or twenty-four hours with moderate heat, thirst, &c., when, without any recurrence of chill or heat, the patient was restored to health. In cases a little more severe the chill and heat recurred a second and third time, prolonging the disease to six or eight days. In still severer cases the rigor was severe and protracted, followed by intense heat and pain. In the worst cases the hot did not succeed to the cold stage, but the patient had cold extremities, and was not sensible of pain.

The subjects of this fever are mostly the labourers on the Illinois and Michigan canal, and the settlers along the larger streams. In the

immediate vicinity of the lake, on the west side, but few cases occur. The traveller, Dwight, (as quoted in Armstrong's Lectures,) observes that the borders of clear lakes are healthy, while those of muddy and stagnant waters are the reverse. This observation I believe to be generally correct. In regard to the proportion of cases that prove fatal, it is difficult to speak with certainty; but, according to my observations, about one in sixteen of the severer cases terminates fatally. Some of these are in very unfavourable subjects.

The treatment varies with each case. In the mildest, gr. viij. of blue pill mass, given at evening, followed in the morning by ℥j. castor oil, with confinement to bed, were sufficient to effect a cure. In severer cases, calomel, followed by castor oil, emetics, general blood-letting, if the patient was of good habit, or if there were marks of severe local affection, were employed in the first stages; in the later periods, local bleeding, blisters, and calomel, in smaller portions, were useful. Cold sponging, or effusion, with iced water for drink, was of the greatest use, when the febrile action was high. The usual routine of treatment in northern Illinois, is calomel, in large doses, from first to last. Forty grains is considered a moderate dose, and ʒjss. is often given. Much harm, I am sure, results from the indiscriminate use of this article. In persons of delicate constitution, and in those weakened by previous disease, it is apt to produce ptyalism, and in all cases it is liable to leave behind chronic irritation of the bowels, which is not free from danger.

In August, 1839, the fever occurred, commencing much in the same manner as in '38. It ceased early in September. It differed from that of 1838, in being often accompanied by severer local affections, somnolence, and profuse sweats. General blood-letting was oftener required, but had to be used in the first stage, and in moderation, or it was injurious. Tonics, wine, bark, sul. quiniæ with wine, were useful in the later stages of nearly every case. In the fevers of '38, they were but rarely required. The disease of this season was less fatal than in the previous year. Out of twenty-eight cases I lost none.

I witnessed the examination of two persons dead of this fever. The first died on the sixth day of the disease, during the operation of a lobelia emetic. The mucous membrane of the stomach and duodenum were red, thickened and softened in several spots. The mucous coat of the ileum was red and thickened, and covered with a dark mucous. The elliptical patches of the ileum were thickened, and of a light color; the mesenteric glands, opposite to these thickened patches, were redder than the rest. The mucous coat of the colon and rectum was, in spots, thickened, softened, and covered with green mucous.

The liver was of its natural size and colour, but on being cut or torn, its vessels poured out blood and bile freely. The spleen, pancreas, and kidneys were healthy.

The second subject died on the twenty-first day of the disease. He had been convalescent, but had a relapse, with diarrhœa, for which he took several large doses of calomel; the diarrhœa increased, and, after copious discharges of blood, by stool, he died.

The mucous membrane of the stomach was red, and thickened in some small spots along the greater curvature; that of the duodenum and upper portion of the ileum was but slightly reddened and softened in spots. In the lower yard of the ileum it was throughout of a dark brown colour, thickened and softened. The intestine at this part was contracted in size, and filled with mucous, tinged with blood. The same appearance, in a smaller degree, extended through the colon and rectum; in the latter were some small ulcerations.

The liver was of the natural size but pale; in the other abdominal viscera no marks of disease were observed.

I was unable to obtain full histories of these cases, or to make further examinations of the bodies.

The above is but a slight outline of the more prominent features of this disease, but I hope it is sufficient to enable the experienced practitioner to discover somewhat of its character and treatment. Of the agues and other diseases of the country I have purposely omitted to speak at present.

Chicago, Ill., October, 1839.

DOMESTIC SUMMARY.

University of Virginia.—Dr. Howard, late Professor in the Medical Department of the University of Maryland, has been appointed Professor of Medicine in the University of Virginia, and he has accepted the appointment.

Death of Dr. Antony.—We learn with much regret the death of Dr. Milton Antony, Editor of the Southern Medical and Surgical Journal, and Professor of Obstetrics in the Medical College of Georgia—a physician of considerable professional distinction, an able writer, and a worthy gentleman.

Southern Medical and Surgical Journal.—We are sorry to see that the death of Dr. Antony has caused the suspension of this journal. Should future arrangements be made for the continuance of the work, due notice will be given to its subscribers.

Medical College of Georgia.—The vacancy in the Faculty of this Institution, created by the death of Dr. Antony, will, we learn, be filled at

as early a day as practicable, and no interruption will take place in the regular course of lectures.

FOREIGN SUMMARY.

Velpeau's Clinical Lectures on Ophthalmia. No. IX.

INFLAMMATORY AFFECTIONS OF THE CORNEA.

Treatment of Acute Keratitis, continued.

Purgatives.—Purgatives are much employed in the treatment of keratitis, and are classed among internal irritants; improperly so, in my opinion, as it is by no means certain that they act by irritating the intestines. It is much more probable that they act on the system in general, by the quantity of fluid which the mucous membrane of the intestines secretes under their influence. The purgatives which appear to be most frequently used are castor oil, jalap, scammony, aloes, colocynth, &c.; I am, however, at a loss to decide whether theory or experience has induced practitioners to prefer them. I have myself given all these purgatives a fair trial, either alone or combined, and not only am I unable to say whether one merits the preference over another, but I have even some doubts respecting the value of purgatives in general in this affection.—They appear to be useful as adjuvants, when combined with blood-letting, but given alone their efficacy is certainly but slight. In all cases, however, in which the tongue is foul, the breath bad, the abdomen distended, they are extremely beneficial. Indeed, purgatives ought, I think, to be considered more as medicinal agents, to be employed against the disordered state of the digestive organs, than as general remedies likely to act on the inflammatory diseases of the eye.

Among the various purgatives which are used, there are two which have attracted great attention—the tincture of colchicum and calomel. The tincture of colchicum has been principally employed in England, in the rheumatic and arthritic of ophthalmia; that is, in keratitis and iritis. I have often tried it, in doses varying from fifteen or twenty drops to a drachm and a half or two drachms daily. The tincture acts as an irritating purgative, but its purgative effects are exceedingly variable. Sometimes a patient is purged with twenty drops, sometimes a drachm produces no effect whatsoever. Generally speaking, the tincture does not act in doses under a drachm. I now never give less, often more. I believe that it exerts a beneficial influence over the course of the disease, but I have never seen a marked improvement take place from day to day, as some authors assert they have done; and as we have other purgatives the action of which is preferable, I now seldom employ it.

As regards calomel—the panacea of some ophthalmologists for diseases of the eye—I have given it in every possible manner, in doses of six, eight, or ten grains daily, in doses of twenty-four or thirty-six grains every twenty-four hours, divided into fractional doses of two or three grains every hour, combined with opium or with sulphur. In some cases I have administered it so as to produce salivation in the course of three or four days, in others so as only to produce this effect in twelve or fifteen days. The result of all these essays is, that I cannot allow calomel to be as efficacious a remedy as English practitioners represent it to be; I have seldom seen keratitis rapidly modified by its action, and in some cases, although considerable salivation had taken place, the progress of the disease was not arrested. In the greater number of patients to whom I have given calomel, it seemed to produce no effect whatever on the ophthalmia; with some there was slight amelioration, but that amelioration did not seem to me greater than that which the tincture of colchicum and other purgatives generally produce. The efficacy of this remedy has, in my opinion, been much exaggerated; it is in reality, much less beneficial in keratitis, and, indeed, in ophthalmia in general, than is generally asserted. I, therefore, only employ it when the disease resists the action of other therapeutical agents, or when the constitution of the patient, or the state of weakness in which he is, from previous loss of blood, will not allow us to have recourse to depletion. I am also cautious in administering it, as under whatever form mercury is given, its introduction into the system is often attended with disagreeable consequences. It may produce a mercurial stomatitis, or an affection of the mucous membrane of the intestinal canal, which swells, and becomes of a grayish colour; and this affection is rather difficult to cure.

The remedies which are used as alteratives in the treatment of keratitis, are iodine, sulphur, and tartarized antimony.

Tartarized antimony has been much praised in England by Mr. Lawrence and Dr. Mackenzie; they give it according to the method of Rasori, in doses of eight, ten or twenty grains, in the twenty four hours. Some practitioners combine it with sulphur or opium. To form an opinion of this, or indeed of any other therapeutical agent, there are two kinds of data to consult—the facts published by others, and those which our own experience furnishes. When the facts which are brought forward to prove the efficacy of a remedy are carefully examined, it is, in some degree, possible to foresee what will be the result of any essays undertaken to prove how far the assertions made in its favour are correct. In some instances the facts are so striking, that it is impossible not to allow that the remedy is possessed of some efficacy; in others we cannot but question the influence it has had over the course of the disease, when we find, as in the cases published in favour of tartarized antimony, that it had already existed several days before the remedy in question was employed, and that general and local blood-letting, blisters, and setons, were resorted to at the same time. I have myself often tried tartarized antimony, in doses of from four or six to ten or fifteen grains, but do not believe that it exercises any specific action whatever over the disease.—It either acts as an irritant on the intestinal canal,

or on the system in general, by giving rise to a copious secretion from the surface of the mucous membrane. I think it is as efficacious a remedy as the tincture of colchicum, or purgatives in general, but not more so; and as it occasions continued nausea, which distresses the patient, I now scarcely ever employ it.

With regard to the tincture of iodine, and sulphur, I have not often had recourse to them, and then only when all other means had failed. The results I have obtained are of a very unsatisfactory nature. Sometimes the patients were better, sometimes they were worse; but it would be difficult to say whether the change was to be attributed to time or the remedy. I must say I place very little confidence in their action.

In conclusion, the general treatment of this disease only offers one really efficacious therapeutical agent, and that is, general blood-letting, unless we consider blisters applied over the eyelids as forming part of the general medication. All the other remedies are merely to be looked upon as adjuvants.

Local treatment.—However successful the general treatment of acute keratitis may be, it seldom entirely subdues the inflammation. In most cases, although the intensity of the symptoms may be mitigated, they do not entirely disappear, and it becomes necessary to have recourse to remedies which act directly on the tissue which is affected. Local treatment is not, however, equally serviceable in every form of keratitis; it is indeed more especially on examining the action of topical applications that you will perceive the utility of the division I adopted when describing the disease. When the deeper layers of the cornea are inflamed, their influence must necessarily be very limited, as they do not remain in contact with the cornea sufficiently long to reach the seat of the affection, either by imbibition, or by endosmosis. Some ophthalmologists have been so much influenced by these considerations as entirely to reject local remedies in the treatment of keratitis. This rejection, however, is not warranted by experience, as even in diffuse interstitial keratitis, the application of local remedies is not unfrequently followed by favourable results. In superficial keratitis they are extremely useful, especially when the conjunctiva is inflamed—and you well know that this is nearly always the case—by dissipating the inflammation of the conjunctiva. They also act on the affection of the cornea; this you will at once understand, if you recollect the nature of the vascular communication which exists between the interior and the exterior of the eye. When ulcerations of the cornea exist, more benefit is to be derived from topical applications than any other class of remedies.

Before we commence the examination of the various topical applications which are used in the treatment of keratitis, I must call your attention to a certain number of therapeutical agents which do not, in reality, deserve the name of local remedies, as they are generally applied round the eye or above the orbits; I mean the mercurial and belladonna ointments, the tincture of digitalis, &c. Mercurial ointment has been praised as an external application by those who thought they derived benefit from mercurials used internally. The cutaneous surface of the eyelids, and the integuments which surround the orbit, are rubbed night and morning with a small quantity of the ointment. Thus applied it is often productive of benefit, but it is not, certainly, as efficacious as most authors have asserted. It is now seldom used alone, being generally associated with some preparation of belladonna, digitalis, or opium. These substances are combined with the mercurial ointment, principally with a view to modify the photophobia and epiphora, which form such prominent symptoms in keratitis. It was supposed that these symptoms originated in retinitis, or in the inflammation of the ciliary circle, and by employing belladonna—a substance which acts principally on the nervous system—it was thought that they might be mitigated. These theoretical ideas are, you well know, erroneous, photophobia and epiphora being generally caused by ulceration of the cornea, consequently the influence of these medicinal agents cannot be very great. The combination of these substances with mercurial ointment is, nevertheless, advantageous when the pain is intense, as is often the case in deep-seated keratitis. The tincture of digitalis may be employed in the same manner, and with the same results.

The most simple topical remedies are emollients, such as linen steeped in cold or warm water, and poultices. The more important are the various collyria and ointments.

In the first stage of keratitis, if the inflammation is very slight, it may possibly be subdued by bathing the eye continually with cold water; but when that period is passed, a compress steeped in warm water, or a light poultice placed between two folds of linen, is more beneficial. Poultices are useful, as emollients, in deep-seated or interstitial keratitis, unattended with ulceration; but in the superficial form of inflammation, or when there is an ulcer, they appear rather to irritate than to do good. It is probable because this remark has not been made, that many practitioners disapprove of them in every case. Ointments are scarcely applicable to keratitis, unless it be to the superficial form when accompanied by conjunctivitis. Owing to the convex form and smooth surface which the cornea presents, they are swept off by the eyelids before they have had time to act on the disease. They are even injurious when the cornea is ulcerated, as they often remain on the ulcerated surface, and acting as foreign bodies, increase the inflammation. This last remark will also apply to the different dry collyria which are employed, such as calomel, the oxide of bismuth, &c.; they are equally injurious when any ulceration exists.—Dry collyria, may, however, prove useful in superficial keratitis, if the cornea is entire; in deep-seated keratitis, on the contrary, they can be of little or of no use.

The liquid collyria employed in the treatment of keratitis are nearly the same as those which

are used in conjunctivitis. They are, as we have already seen, extremely numerous, but not more than three or four are worth preserving. The nitrate of silver collyrium deserves here, as in the treatment of conjunctivitis, the preference over all others; it is an exceedingly useful remedy in superficial keratitis, and is even still more beneficial when the inflammation is accompanied by ulceration of the cornea. You must not, however, expect its effects to be as rapid as in that affection; the vitality of the cornea is not as energetic as that of the conjunctiva, and this physiological condition necessarily exercises more or less influence over the affections of which it may become the seat. I shall not enter into any details respecting the composition and the manner of using this collyrium, as I have already spoken at length on the subject when I gave the treatment of conjunctivitis.

The collyria containing the sulphate of zinc,* and the deuto-chloride† of mercury, belong to the same class. They are both useful remedies, but inferior, I think, to the nitrate of silver collyrium. In some cases of chronic ulceration I have, however, known the solution of the sulphate of zinc succeed, when the nitrate of silver collyrium had failed. These preparations are therefore worth retaining, as one may succeed when the other fails. Narcotics constitute another class of topical agents, among which you will find the tincture of belladonna, the concentrated aqueous solution of opium, Rousseau's and Sydenham's tincture of opium. I have repeatedly applied these preparations pure to the eye in acute keratitis, and have found that in five cases out of six the inflammation was exasperated; I therefore look upon them as topicals of a very irritating nature, and not at all adapted to the acute stage of the disease. Although I disapprove of them when pure in acute keratitis, they may, I think, be serviceable if more or less diluted. Thus, in some cases of ulcerated keratitis accompanied by intense photophobia and neuralgic pain, I have derived considerable benefit from a collyrium containing fifteen or twenty drops of Sydenham's laudanum to four ounces of rose water, to which I sometimes add four or six grains of acetate of lead, or twenty grains of extract of belladonna.

Such is the treatment of acute keratitis. We have yet to study the chronic form of this disease, and its various complications, which we will do in our next lectures; you will then, I I hope, have acquired a full and comprehensive knowledge of the pathology and treatment of the inflammatory affections of the cornea.

Chronic Keratitis.

Chronic keratitis, though generally confounded by authors with other diseases, and but little known or studied before the publication of M. Mirault's interesting essay (Archiv. Gén. de. Méd. 1834,) is nevertheless, an extremely common disease. In most instances it is merely the consequence of acute inflammation of the cornea, but is not unfrequently met with as a primitive affection.

The anatomical characters of chronic keratitis not being the same when it commences at the centre of the cornea as when it commences at the circumference of that organ, it will be necessary for us to examine them briefly in both forms of the disease.

The instances in which chronic keratitis first manifests itself in the centre of the cornea are not so rare as is generally supposed. Whenever it is occasioned by external injury, this region is nearly always the first affected; and you must be well aware that it sometimes occurs spontaneously in the same part of the cornea, as we have lately had several cases of this nature in our wards. When the inflammation is diffuse, the following are the characters which the cornea presents:—its usual transparency gradually diminishes, and it assumes a palish tint, as if it were obscured by a slight mist. Its surface when examined with a lens appears to have lost its polish, and to be covered with small, half opaque specks; but no vessels can be traced in its tissue. This my own experience enables me to advance with certitude, although many observers, and among others, M. Mirault, have maintained the contrary opinion. M. Mirault, who, in his thesis, stated that minute vessels might be observed in the cornea in this the first period of chronic keratitis, has, however, since then retracted his assertion. Sometimes these symptoms succeed each other with rapidity; sometimes, on the contrary—and this is more frequently the case—they are slow in manifesting themselves. There is no shedding of tears, and the patient feels little or no pain; but the sight is always more or less disordered—a fact which the nature of the lesion at once explains. The disordered state of the visual function is, indeed, sometimes the only symptom which informs the patient of the existence of the disease. The suffusion of the cornea, slight at first, gradually increases as the affection advances; and, unless its progress be arrested, the cornea becomes lactescent, or of a deep opaline colour; and flakes of coagulable lymph are deposited between the lamellæ of its tissue. This change in the transparency and texture of the cornea is generally less apparent as we approach the sclerotica. The friction of the eyes against the palpebræ causes pain; and photophobia, as also a certain degree of epiphora, soon declare themselves. When the affection has advanced thus far, the circumference of the cornea, and that part of the sclerotica immediately adjoining, becoming vascular, it is then impossible to distinguish this form of chronic keratitis from the form which we have yet to examine.

When chronic keratitis commences, as it generally does, at the circumference of the cornea, the principal characters are to be found in the peculiar vascularity of the conjunctiva, the sclerotica, and the cornea. The vascular zone of which

* ℞. Sulph, Zinci, gr. iv; Aquæ, oz. i.; Mucil. dr. i. M. ft. collyrium.

† ℞. Hydrar, Deuto-chlor. gr. ¼ ad ½; Aquæ, oz. i. M. ft. collyrium.

I spoke when treating of acute keratitis—and which, as you well know, is formed by the vessels of the conjunctiva, and by those of the sclerotica—exists, but is less regular and less apparent. The conjunctival vessels are superficial, small in number, and irregularly distributed, many of them terminating in the superficial lamellæ of the cornea. Those of the sclerotica, which are given off by the ciliary branches, are deep-seated, numerous, run nearly parallel to one another, and converging as they approach the cornea, are lost in its tissue. Although the cornea thus becomes injected, its transparency is not necessarily impaired; for the small red filaments, which give rise to the vascular appearance it presents, may exist without the slightest effusion of lymph being observed along their course. Mr. Travers says that he has never seen them unaccompanied by slight effusion; but if you observe attentively the patients who enter our wards, you will soon find that the cornea may remain perfectly transparent, though vascular. At a later period, however, coagulable lymph is effused on each side of these vessels; and the opaline streaks, which are thus formed, may, by uniting, entirely obscure the cornea.

You must not, however, suppose that the vascularity is always such as I have just described it. The modifications it presents are extremely numerous, and can with difficulty be accurately described. It is only by attentively studying the disease at the bedside of the patient that you can become familiar with the various forms under which it is observed. Thus the vascularity may occupy a portion of the cornea. When this is the case it assumes a semilunar form, and is either situated at the angles of the eye, where the long ciliary arteries terminate, or at the extremities of the vertical diameter of the cornea, where the short ciliary arteries are distributed. In some cases it is superficial, and is then evidently formed by the anterior ciliary arteries, which anastomose with branches of the muscular and palpebral. Sometimes it is deep-seated and general, and as manifest at the centre as at the circumference.

When the vascularity is circumscribed—and this is principally observed after acute keratitis with ulceration—that part of the cornea which is affected may either remain transparent, or assume a whitish or grayish colour. It may also be covered with small granulations, or there may be a thickening of the conjunctiva. This thickening of the conjunctiva differs from pterygium by its irregular termination, and especially by its adherence to the cornea underneath, which is also more or less vascular.

When the vascularity is superficial, the entire cornea becomes covered with small granulations. Examined with a lens, it appears as if it had been strewn with sand. The vessels which appear on the surface interlace as they arrive at the centre, and form a network, which gives the cornea the appearance of a mucous membrane. It is to this form of the disease, when carried to its greatest height, that authors have given the name of pannus, from the fancied resemblance which there exists between the cornea and a piece of red cloth. It seems as if a soft, thin, red, fungous veil had been applied over the anterior surface of the eye. The cornea, however, still retains some degree of transparency between the principal vascular divisions, so that the patients continue to distinguish large objects, although they are not able to discern with precision their form.

When the vascularity is diffuse, general, deep-seated, and interstitial, the cornea retains, during a longer period, its characteristic properties. The vessels being less interlaced do not so soon modify its transparency, and the granulations of its surface are much longer before they become so developed as to impede the passage of light into the eye. The cornea resembles a mirror, crossed in various directions by small vascular filaments, the volume of which seems rather to increase than to diminish as they recede from the conjunctiva. It is before they disseminate in the tissue of the cornea that the vessels of the conjunctiva and those of the sclerotica anastomose. Between the ramifications of these vessels may be seen streaks, or patches of coagulable lymph, which give the cornea a singular appearance. The pupil always remains clear.

This form of chronic keratitis is nearly always combined with the superficial form. It is impossible to assign a limit to its duration, such is the tenacity with which it resists every plan of treatment.

If in addition to these characters, you bear in mind, that in all cases of chronic keratitis vision is more or less impaired, you will be able at once to recognise the disease, whenever it presents itself to your notice.

Causes.—The causes of chronic keratitis being the same as those of acute keratitis, acting either with less intensity, or on less irritable subjects, it would be useless for me again to enumerate them. Among these causes, however, there is one which I cannot pass over, as little attention has been paid to it by surgical writers; I allude to chronic granular blepharitis. I have, in several instances, seen the affection of the cornea gradually developed under the influence of this cause—a fact which the contact of the membrane with the diseased eyelid easily explains. In one case, in which the granular state of the palpebræ had existed for three months, the keratitis corresponded perfectly with the diseased portion of the inner surface of the eyelids, diminishing and increasing, as the granular blepharitis diminished or increased. In another case the relation between cause and effect was still more evident. The patient, when he entered my ward, had granular blepharitis of the temporal half of both eyelids; before long he was atacked with keratitis, but on the temporal half of the cornea only.

Duration and prognosis.—It is altogether impossible to assign a limit to the duration of this disease. It is one of those affections in which the hopes of the medical attendant, as well as of those of his patient, are repeatedly raised and repeatedly disappointed. The symptoms often appear to

give way for a few days, when suddenly, in the course of a night, the disease regains the ground it has lost. Even when the treatment employed has proved successful, and the inflammation appears subdued, a relapse is of exceedingly frequent occurrence. Abandoned to its own course, the duration of chronic keratitis is indefinite; it often remains many months in the same state, and may at last terminate by entirely disorganizing the cornea. Suppuration of the whole eyeball, or even of the cornea, seldom, however, takes place. That form of inflammation which commences by the centre of the cornea is the mildest; yet it often gives rise to specks which impair the sight of the patient more or less, according to the situation which they occupy. In the order of their importance, I may next name partial keratitis, and then the superficial form of the disease. When the circumference of the cornea only is vascularized, the inflammation often gives way, but when the vascularity is general, deep-seated and accompanied by the white streaks I have already described, little or no hope of effecting a cure can be entertained.

Treatment.—Chronic keratitis, when it has existed for a considerable length of time, and has invaded the entire cornea, is one of those diseases against which all the therapeutical agents we can employ are powerless, and when it does give way, the cure ought sooner to be attributed to nature than to art. It is in vain that you employ the powders, the ointments, the solutions, the collyria, which are often successsful in the acute form of the disease—they appear to make no impression. Blisters over the eyelids, which one would suppose likely to prove beneficial, seem to have lost their efficacy. Blood-letting, purgatives, and mercurials, are not more successful agents, and annular cauterization with the nitrate of silver, lauded by some practitioners, has been as inaffective, in my hands, as all other remedies.

Some surgeons, seeing how difficult it is to overcome the inflammation, have proposed the excision of that portion of the conjunctiva which surrounds the cornea, with a view to prevent the afflux of blood to the diseased membrane. If, however, you call to mind what I have said respecting the distribution of the vessels of the eye, you will perceive at once that the operation is not calculated to accomplish the end proposed. By excising the conjunctival vessels which ramify on the superficial lamellæ of the cornea only, you destroy but one of the sources from which that membrane is supplied with blood; the ciliary arteries which furnish the ramifications seen in the tissue of the cornea, remaining intact. As might, therefore, be easily anticipated. the result of the operation is, generally speaking, far from favourable. I have tried it in many instances, but without success. Among other cases I remember that of a man who was in my wards some few years ago. I tried purgatives, mercurials, cauteries on the temples, blisters over the eyelids, and every topical application that can be thought of, yet he left me nearly in the same state as when he entered the hospital. Some time after, the circular incision of the conjunctiva was resorted to in another hospital, and the case was published in the medical journals as successful. A month after this, however, he was again in my wards, exactly in the same state as when he left me.

Fortunately the cases we are called upon to treat are not all of this nature. They may be recent, and then often yield to proper treatment.—If the tissue of the cornea itself is inflamed, general measures are indicated. In such cases I generally proceed in the following manner:—I begin by bleeding from the arm, regulating the quantity of blood abstracted by the intensity of the inflammation, and the constitution of the subject; the following day I give a purgative; the fourth day I cup the patient on both temples, and on the sixth day I recommence the same course of treatment, modifying it as circumstances may direct. Cauteries on the temples, so often employed by Mr. Lawrence, and mercurial frictions, may also be employed. By a treatment thus directed, I have often succeeded, when local measures had proved altogether ineffectual. Collyria are, generally speaking, of little or no use in this form of the disease.

When the inflammation lies principally, or entirely, in the superficial layers of the cornea, the treatment is different, topical remedies being then most likely to prove beneficial. Calomel, bismuth, laudanum, and the various resolutive collyria, may be employed alternately. The solution of the nitrate of silver prepared according to the formula which I have given you, more especially deserves the notice of practitioners. It has often been of great service to me when other remedies have failed to produce any effect. Excision of the conjunctiva is likely to prove successful in this form of the disease, unless, indeed, the inflammation also occupy the deeper seated lamellæ of the cornea; the superficial vascularity of the inflamed membrane being supplied, as you well know, by the vessels of the conjunctiva.

It is generally considered necessary in keratitis, and indeed in nearly all other ocular inflammations, to keep the eyes covered, and to place the patient in a room from which light is more or less excluded. These precepts are, however, founded on erroneous views, and are, I am convinced, more calculated to do harm than good. I do not mean to say that, when the eyes are inflamed, they should be exposed to the open air, or to a strong light without any protection, for this would be falling into the other extreme; but that a middle course may be, and ought to be, adopted. When a portion of the conjunctiva has been excised, the measures which I now condemn must be resorted to with a view to prevent, if possible, the inflammation and suppuration of the wound that has been made. I would here mention, that the loss of substance which follows the circular excision of a portion of the conjunctiva is sometimes at-

tended with disagreeable consequences. In one case, in which the operation had been performed, the formation of the cicatrix drew down the palpebral conjunctiva, giving rise to ectropium of the eyelid. In another case in which the inflammation of the cornea appeared to be kept up principally by the vessels of the conjunctiva, excision of a portion of that membrane was followed by suppuration of the cornea, and the total loss of the eye; it would seem as if the nourishment of the cornea had been supplied by the conjunctival vessels alone.—*Lond. Med. Gaz.*

Proceedings of the Medical Section of the British Association for the Advancement of Science.

President.—Dr. YELLOLY.

Vice-Presidents.—Dr. JOHNSTONE, Dr. ROGET, Dr. MACARTNEY.

Secretaries.—Dr. G. O. REES, Mr. F. RYLAND.

Committee.—Drs. Blakiston, Booth, G. Bird, Mr. W. S. Cox, Drs. Evans, Foville, B. Fletcher, Hastings, T. Hodkin, Mr. J. Hodgson, Drs. J. Johnstone, Pritchard, Mr. J. Russell, Drs. R. S. Sargent, Vose, Mr. R. Wood, Dr. Wale.

After an introductory address from the President, one of the Secretaries read a paper, communicated by Sir David Dickson, containing, 'Abstracts of a remarkable case of Rupture of the Duodenum, and of some other interesting cases.'

R. H. was admitted into the hospital on March 3d, at three o'clock, P. M., and died before midnight. The symptoms were, severe pain in the region of the cæcum and ascending colon, hurried, restless manner, pale, haggard, and anxious countenance, short, hurried respiration, pulse weak, quick, and irregular. Depletion, followed by aperients, had been resorted to, without relief; leeching, fomentation, and warm purgatives, were resorted to without any relief, and at half-past eleven he sunk. It was ascertained, that he had been fighting and wrestling three days before, when he was thrown with violence on the breach of a gun. Post mortem examination discovered the following lesions:—The stomach, bowels, and abdominal cavity were filled with gas, the descending colon was much contracted; a quantity of ingesta had escaped from four perforations in the duodenum, the mucous and muscular coats of this gut were pellucid and attenuated, as having undergone ramollissement and absorption, in consequence of which, the peritoneal coat seemed to have given way, from distension or mechanical violence; the other viscera seemed generally healthy. It is known that sudden death frequently follows violent feats of tumbling and horsemanship, and, if examination were made, probably similar lesions would be found, or might exist without being detected, from the examination not being sufficiently minute; and thus the cause of death may more frequently occur than is generally supposed.

The next case detailed was one of Ileus, with enormous distension of the cæcum, which occupied the situation of the transverse colon. The usual symptoms of ileus were present—viz., obstinate constipation, stercoraceous vomiting, and singultus. The ileo-cæcal valve was much diseased, being thickened, and as hard as cartilage. The cæcum, which was forced upwards, had a black and phaselated appearance, and was enormously distended. A strong membranous band, the product of previous inflammation, extended across the ileum, and firmly connected it with the meso-colon. Another case was one of *intermittent coma* from diseased brain. This case was remarkable, for the alternations of coma and excitement. The *post mortem* examination showed the arachnoid membrane to be opaque, and to be raised up from the brain by a gelatinous deposit. A considerable bloody effusion was found at the base of the brain, proceeding from the rupture of a true aneurism of the anterior artery of the cerebellum, near its junction with the basilar artery. The coats of the artery exhibited distinct ossific deposit—the cerebellum, on the left side, was wasted and softened in structure, and of the appearance of curdy pus. The aorta was found extensively invaded with ossific degeneration;—scales of bone as large as a sixpence being separable from it, and its elasticity much impaired. Other cases of coma were detailed, in which depositions of a cartilaginous and tubercular nature were found in different parts of the brain. In a case of Phthisis, the *foraman ovale* was found open; cyanosis did not exist; and the patient, a pensioner, had completed his due period of servitude, and had risen to the rank of sergeant, without suffering any inconvenience from the free communication between the right and left sides of the heart.

The next case was one of Phlegmonous Erysipelas, occupying the arm and thoracic muscles of left side, and remarkable for its extreme rapidity. Two cases of severe abdominal disease were also detailed. In the last was observed an extensive deposit of semi-cartilaginous firmness, occupying the subserous cellular tissue; the calibre of the descending colon was so contracted, that, when cut across, it appeared as if encircled by a ring of "a dull white, yet glistening fish-like substance," fibriform, and from half an inch to upwards of an inch in thickness.

Mr. Middlemore read a brief notice of the methods that have been used for the removal of capsular cataract, where the opaque capsule remains after absorption of the lens, for the purpose of introducing to the Section an instrument to facilitate the operation of extraction, without interfering with the transparent structure of the eye.—The instrument consisted of a needle, accompanied by a small forceps, the former capable of being withdrawn, leaving the latter to be fixed on the opaque membrane, and then withdrawn through the sclerotic, through which the needle had been introduced.

In answer to a question from Prof. Macartney, Mr. Middlemore stated, that he had not yet practically proved the efficiency of the instrument.

Mr. Middlemore detailed a case in which the operation for artificial pupil was performed with success, and presented the patient to the Section for examination. About three years ago much injury was done to the face from an explosion of gunpowder. After recovery of the other parts, the eyes were found to be in the following condition:—the right was completely collapsed, the left was staphylomatous, the lens adhering to the staphyloma, but transparent; the lower half of the cornea was opaque, the upper half transparent, but vision destroyed, from the closed iris being opposite to the transparent portion of the cornea. The first effort was to remove the staphyloma, which was done by repeated puncturing of it with a fine needle. When the process of removal was so far completed, as to permit the operation for artificial pupil, the iris was drawn through a small section of the cornea: it bled freely; but on the subsidence of the hæmorrhage and irritation, a sufficient and well-defined opening was found in the iris opposite the transparent portion of the cornea. The external portion of the iris was allowed to remain strangulated by the incision. The patient has already in a great degree recovered his sight, so as even to distinguish large print. He is still under treatment.

Dr. Foville (of Paris) presented a paper, detailing the results of his researches on the Anatomy of the Brain. He commenced by urging the advantages of examining the structure of the brain by manual separation rather than by section, and gave credit to our countryman Willis, as being the first advocate of this method. He showed that the spinal marrow consists of two lateral portions; united by two commissures, between which, on the median line, there exists a double layer of white matter, analogous to the ventricle of the septum lucidum. He pointed out a remarkable difference of structure in the lateral parts of the spinal marrow, between the roots of the nerves, which is rendered most evident by maceration in water, after previous maceration in spirit. He next described the medulla oblongata. Tracing the crura cerebri to the brain, he showed them to consist of two parts,—the one going to the thalamus opticus, the other to the corpus striatum, where they constitute the white matter,—passing through the middle of those bodies, at the upper and outer limits of which they divide into three layers,—the superior passing upwards and inwards, meets its fellows on the median line, and forms the corpus callosum; the second, or middle, is expanded in the hemispheres, which it constitutes, by lining the cineritious matter of the convolutions; the third, or inferior, and by far the smallest layer, passes to the outer side of the thalamus and corpus striatum, meets its fellow inferiorly, and ascending with it, forms the septum lucidum.—In addition to these facts, he stated his more recent discovery, of several nearly circular systems of white fibres connecting the expansions of the superior part of the crus cerebri, which, from their connexion with the olfactory and optic nerves, and also with the posterior part of the spinal marrow, appear to be essentially devoted to sensation. He also stated his fully confirmed observations, that the pathological affections of the thalamus influence the movements of the [arm of the] opposite side of the body, as those of the corpus striatum do those of the lower extremity. He noticed a similar connexion between the lesions of the cornu ammonis and the motions of the tongue. He combated the idea that the frontal, parietal, and occipital protuberances, are dependent on special developement of the corresponding parts of the brain, but are rather to be attributed to the distension of corresponding parts of the ventricles. After the reading of the paper, Dr. Foville demonstrated the leading facts alluded to, on the recent brain.

Prof. Macartney said, that his own researches confirmed those connexions of the fibres of the brain pointed out by Dr. Foville; but a more extensive and minute connexion between the different portions could be traced than those now demonstrated. He also stated, that the roots of the spinal nerves, by a beautiful plexus or net-work prolonged on the spinal column, formed its outer wall, and communicated with those spinal nerves above and below. Dr. Foville was aware of those more minute communications alluded to; but on the present occasion he did not attempt to give a complete exposition of the nervous system, as being unsuitable, from its great extent. Dr. Evans stated, that having Dr. Foville's pathological statements, as derived from his anatomical investigations in the 'Dictionnaire de Médecine,' he had minutely examined the cases reported by Lallemand, Rostan, and Andral, and found them to corroborate those views in almost every instance.

Prof. Macartney read a paper 'On the Means of repressing Hæmorrhage from Arteries.' He stated that the barbarities practised by the older surgeons, such as burning and searing, instead of the ligature, proceeded from the adoption of the false theory, that a certain amount of inflammation was necessary to the healing process, and, although modern surgeons are easier satisfied, the theory has been preserved; the continental surgeons, however, insisting on a greater degree of inflammation than the British. Even the ordinary ligature, he observed, has been known to fail, from the injury and consequent inflammation inflicted by it; to obviate this, he was induced to try the effects of metallic ligatures, from observing that such substances frequently remained in the body without exciting any uneasiness. On applying ligatures of leaden wire to the arteries of dogs, he found, after death, that they remained *in situ*, without surrounding inflammation, or were removed by interstitial absorption, the arteries being impervious. The same results were observed when the experiment was made on the jugular veins of rabbits. An improvement was made by Mr. Weiss on the leaden ligature, by substituting soft metal wire, capable of being knotted. He next alluded to the well-known

fact of the closure of arteries in lacerated wounds; this he attributed to the rupture of the elastic coat and the elongation of the outer or cellular, so as to present merely a minute orifice, which was closed by coagulated blood, and not by the retraction of the artery, as Mr. Abernethy had supposed. In the treatment of stumps, he thought it a matter of doubt, what arteries must necessarily be tied, when the powers which nature possesses to repress hæmorrhage be considered, and the cut surfaces be treated as an open wound, with cold applications. He related a case communicated to him lately by Mr. Darley, near Bray, in Ireland, in which, after amputation of the hand of a child, the stump was dressed with lint, kept wet with cold water, *and no ligature was applied or required.* This, the Professor deemed to be the first case on record, in which amputation was performed without the application of a ligature; he related another case, of severe wound of the thigh, in which the femoral artery was opened, and after some delay, was tied, yet hæmorrhage to a considerable amount recurred; nevertheless, by keeping the wound exposed, and cold (in the form of ice) applied, the bleeding was repressed, and the closure of the wound proceeded to a favourable termination.

Prof. Gibson, of Philadelphia, stated, that twenty-five years ago, Dr. Physick had introduced ligatures of leaden wire, influenced by the same considerations as Dr. Macartney. This he wished to state, not as detracting from the merit or originality of the learned Professor's views, but as corroborating them. Mr. Hodgson agreed with Dr. Macartney, that inflammation was not necessary to the reparation of injuries, but he did not think that what Dr. Macartney called the modelling process, was the usual means nature adopted for the closing of arteries; but contraction. He thought metallic ligatures might prove injurious, from causing ulceration and sloughing of arteries in their process through the body. He also objected to soluble ligatures, such as catgut, as liable to premature softening. Silk ligatures he thought injurious from their too long detention on the artery. Hemp, as in common twine, he deemed the best. He agreed with Dr. Macartney that the exposure of an artery promoted its contraction, but thought it might prove a dangerous experiment; experiments on healthy animals might lead to inferences not to be applied without danger, to seemingly analogous cases of invalid patients. Prof. Macartney explained, that he did not advocate the metallic ligature in all cases.—Mr. Wickenden detailed a case strongly supporting Dr. Macartney's opinion, as he thought. It was one in which amputation was performed on a patient, whose arteries were extensively ossified: attempts to fix ligatures repeatedly failed, yet by attending to the elevation of the stump, and the application of cold, serious hæmorrhage was prevented.

Dr. Blakiston read a paper 'On the Sounds produced in respiration, and on the Voice.' He commenced by showing that the respiratory sound, coarse and intense when heard in the trachea, became weaker and softer as it approached the periphery of the chest, at which point the sound, during expiration, had almost totally disappeared. The air, in passing along the trachea and bronchial tubes, would meet with solid obstacles, and therefore be thrown into sonorous vibrations at every alteration of direction. The divergence of sound caused by the great sub-divisions of those tubes, and the constant diminution in their calibre, would necessarily tend to soften and weaken the respiratory sounds from the trachea towards the air vesicles. But the sounds produced by inspiration were carried up to the ear, placed on the chest, by the current of air during that act; while that produced by expiration, was carried quite in a contrary direction; hence the difference in intensity. It was next shown, that bronchial respiration, occasioned by solidification of a portion of the lung, did not take place in the tubes leading solely to that portion, as had been supposed by Andral aud Laennec, but that it took place in tubes leading to healthy expansible vesicles; and the ear being brought into contact with these tubes, perceived the coarse sound of the air passing and repassing in them. It was contended that no sensible part of the sound of vesicular respiration was produced in or around the vesicles, or by the rubbing of the pleura, otherwise it would be heard in expiration; nor in the mouth or fauces, otherwise stertorous breathing would increase its intensity, which it never does. The voice being an instrument of the membranous reed kind, Dr. Blakiston detailed a number of experiments which he had made with different kinds of pipes on the wind-chest of an organ, which led him to conclude that the quality of tone of wind instruments became uniformly more coarse and buzzing in proportion to the strength of the blast, and the thickness and elasticity of their sides; in other words, in proportion as the instrument itself entered into strong vibration. Some instances of the manner in which interference and jarring was produced between those solid vibrations of the instrument and those of the air contained in it, were then given. It was shown that both kinds of vibration were concerned in the formation of the voice; hence, when heard over the larnyx, it was found to be coarse and intense; in proportion, however, as these vibrations travelled downwards towards the air vesicles, they were deadened, the aërial waves by the opposing current of expiration, and the solid ones by the increasing mass of the non-homogeneous mass of the lungs; and at their periphery, no resonance of the voice could be detected. When, however, a portion of the lung became solidified, the current of expiration leading from it was stopped, and the spongy lung was transformed into a more homogeneous, and, therefore, a better conducting substance; hence the voice resounded strongly, and its quality became sometimes so coarse as to produce a tingling sensation in the ear.

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